

- [54] **METHOD AND APPARATUS FOR
ALTERING A REGION IN THE EARTH'S
ATMOSPHERE, IONOSPHERE, AND/OR
MAGNETOSPHERE**
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H05H 1/46
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[57] **ABSTRACT**

A method and apparatus for altering at least one selected region which normally exists above the earth's surface. The region is excited by electron cyclotron resonance heating to thereby increase its charged particle density. In one embodiment, circularly polarized electromagnetic radiation is transmitted upward in a direction substantially parallel to and along a field line which extends through the region of plasma to be altered. The radiation is transmitted at a frequency which excites electron cyclotron resonance to heat and accelerate the charged particles. This increase in energy can cause ionization of neutral particles which are then absorbed as part of the region thereby increasing the charged particle density of the region.

15 Claims, 5 Drawing Figures

